enabled to set forth in detail the questions arising in Pasteur's mind in the course of an investigation, and his methods of answering them by experiment. It is from this standpoint particularly that the book should prove of unique value to the student taking up research in the biological sciences, who wants training in the use of the experimental method and interpretation as practiced by a scientific mind of the highest type, as well as the technique to which most research teachers are solely addicted. It has not the usual dryness of a textbook—the play of logic, suspense and triumphant experiment reads like a Dumas. Duclaux has written a most inspiring and charming book, and it would have been a loss indeed had it not been rescued and rendered available to English readers.—HARRY BRAUN.

PROCEEDINGS OF THE CLUB

MARCH 24, 1920

A meeting of the Club was held at the New York Botanical Garden at 3.30 P.M. Professor R. A. Harper presided. There were 19 persons present.

The minutes of the meetings held February 25 and March 10 were adopted.

Mr. Ludlow Griscom and Mr. Elba E. Watson were proposed and elected to membership.

The appointment of Dr. Michael Levine as Chairman of the Field Committee, instead of Dr. F. W. Pennell, was announced.

The scientific program consisted of a discussion by Mr. Norman Taylor of the flora of Mount Marcy, New York, above timber-line. Twice during the season of 1919 did Mr. Taylor, in coöperation with others stuying the vegetation of the state, visit the summit of Mount Marcy. Timber-line was noted at 4,300 feet altitude, and the factors controlling this were considered. Various floras occur on bog land, dry slopes, rock outcrops, etc., and a list of all species seen were made. This was compared with the list made about 1880 by the late Dr. C. F. Peck.

Only 67 species were found above timber-line, and of these

only 16 to 20 may be counted true alpines. The majority are species of the lowland which have now passed above the spruce forest.

FRANCIS W. PENNELL,
Secretary.

APRIL 13, 1920

A meeting of the Club was held at the American Museum of Natural History at 8.15 P.M. President Richards presided. There were 18 persons present.

Mr. V. C. Dunlap, Mr. E. M. Gilbert, Miss M. B. Greenwood, Mr. T. R. Greer, Mr. G. T. Harrington, Mr. Emil Heinold, Prof. W. W. Rowlee and Mr. H. E. Stork were proposed for membership and elected.

Mr. O. F. Burger gave an account of "Spoilage of Fruits and Vegetables in Storage and Transit"; and Mr. O. F. Meier discussed "Spoilage of Vegetables." Both discussions were illustrated.

The discussions considered the organisms causing trouble, especially fungous parasites and saprophytes, and the methods of controlling these. The subject was presented in clear, non-technical terms.

FRANCIS W. PENNELL,
Secretary.

APRIL 28, 1920

The meeting of April 28, 1920, was held in the Morphological Laboratory of the New York Botanical Garden at 3:30 P.M., with Dr. F. J. Seaver as chairman. Eleven persons were present.

Minutes of the meetings of March 24 and April 13 were read and approved.

The resignation of Mrs. T. W. Johnston was read and accepted. The acting secretary announced the death of Mr. F. W. Brugger-hof, the late president of the J. M. Thorburn & Co.

The following persons were proposed for membership and were elected subject to the approval of the committee on membership: Mrs. L. J. Gold, 263 East 197th St., New York City; Miss M. Hathaway, 110 Morningside Drive, New York City;

Dr. Claude E. O'Neal, Ohio Wesleyan University, Delaware, Ohio.

The scientific program consisted of a paper by Dr. P. A. Rydberg under title of "Rearrangement of the Genera of the Tribe Galegeae of the Family Fabaceae or Papilionaceae," of which an abstract follows:

"The tribe *Galegeae* has been divided since Bentham's time into seven subtribes. Of these *Psoralieae* was some years ago taken out as a tribe. It contains *Psoralea*, *Amorpha*, *Parosela*, *Petalostomon*, and several related genera, characterized by the foliage, which is glandular-punctate, and the pods, which are one- or few-seeded, usually indehiscent but rarely breaking open irregularly across the middle, never valvate. Another subtribe, the *Indigofereae*, should also be removed as a tribe. The genera belonging to it (of these only *Indigofera* is found in America) have three characters seldom found elsewhere in the Fabaceae, and never combined in any of the tribes of that family, viz. Malpighian hairs on the foliage, appendaged connective in the anthers, and lateral spurs on the keel-petals.

"The other five subtribes should probably remain in the *Galegeae*. Of these *Brongniartieae*, consisting the genera *Brongniartia* and *Harpolyce*, is rather natural and based on the erect, stalked, and distinctly strophiolate seeds, a character rather unusual in Fabaceae but very common in Caesalpiniaceae.

"The other four subtribes are very artificial. The *Tephrosieae* are distinguished from the rest by the terminal instead of axillary inflorescence, but the inflorescence in the principal genus *Cracca* L. (*Tephrosia* Pers.) is very variable. In about half the species the racemes are strictly terminal, but many of these species have additional axillary racemes in the upper leaf-axils. In others a bud in the uppermost leaf-axil develops into a branch which in turn produces a terminal raceme. This may be repeated several times and the several racemes appear as if opposite to the leaves. In a few species the racemes are borne obliquely, neither opposite nor exactly in the axils, and it is hard to tell if they are really terminal or axillary. The subtribe contains five genera, four native and one introduced. Of these the last,

Galega is closely related to *Cracca; Peteria* is less closely so, while neither *Barbiera* nor *Kraunhia* (*Wisteria*) should be placed in the same tribe. The presence of two bractlets under the flower would indicate that *Barbiera* is related to *Sesbania* and *Diphysa* among the *Robinieae*, although the structure of the pod is different. *Kraunhia*, notwithstanding the terminal racemes, is very closely related to *Robinia* and should either be transferred to the *Robinieae* or else form with the Asiatic genus *Millettia* another subtribe.

"The subtribe *Robinieae* is distinguished from *Coluteae* and *Astragaleae* by its one-celled, two-valved, flattened not inflated pods, but in the genus *Diphysa*, just referred to, the exocarp of the pod is inflated and forms two lateral bladders, and in *Homalobus* and *Kentrophyta*, segregates of *Astragalus*, the pod has all the characters assigned to *Robinieae*. *Robinia*, *Olneya*, *Benthamantha*, *Lennea*, *Willardia*, *Hebestigma*, *Gliricidia*, and *Poitea* form a very natural group, the true *Robinieae*, with truly axillary racemes, flat, two-valved pods and odd-pinnate leaves. *Corynella*, *Notodon*, and *Sabina* form also a group with similar pods, but the leaves are abruptly pinnate and the flowers are borne in fascicles on short leafless branches axillary to the leaves of the preceding season. *Coursetia* combines characters of the two groups, some species having odd-pinnate, others abruptly pinnate leaves. Probably these could be segregated into two genera.

"The remaining genera of the *Robinieae* should be removed; they have bractlets under the flowers and characters in the fruit which do not suggest the fruit of *Robinia*. Of these *Diphysa* stands next to *Robinia* in the structure of the flowers and the leaves which are odd-pinnate, but the fruit is very peculiar, the pericarp separating into two layers, the exocarp which becomes bladdery, and the endocarp which is close-fitting to the seeds and constricted between them so that each seed is in a separate chamber. This may constitute a subtribe to itself. The rest, *Sesbenia*, *Daubentenia*, *Agati*, and *Glottidium* form a natural group with abruptly pinnate leaves, bractlets under the flowers and the fruit with more or less distinct cross-partitions between the seeds.

"The subtribe *Coluteae* is distinguished from the *Astragaleae* by the hairy style, a character which in *Robinieae* is barely counted of generic value, while in some species of *Astragalus* the style is hairy just under the stigma. *Colutea* and *Sutherlandia* have escaped from cultivation in the southern states and Mexico.

"As to the subtribe *Astragaleae* the author had not gone over the field enough to suggest any rearrangement. As treated in Engler and Prantl by Taubert it contains only three American genera, *Astragalus*, *Oxytropis* (*Aragallus*) and *Glycyrrhiza*. Even if these should constitute a subtribe the first genus at least must be broken up, for two of its segregates, *Homalobus* and *Kentrophyta* (both American), as already stated, have flat one-celled, two-valved pods as in *Robinieae* and the former has the habit of *Benthamantha* of that subtribe. In *Hamosa* another segregate, the pod is flat but longitudinally two-celled, and in *Atelephragma* rudimentarily so. Whether these genera or some of them should be transferred to the *Robinieae* or the two tribes merged, requires further study to decide. If these subtribes are to remain as heretofore, other distinguishing characters must be found."

Adjournment followed.

MARSHALL A. HOWE,
Acting Secretary

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